

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT (PCT Article 36 and Rule 70)

REPLACED BY
ART 34 AMDT

Applicant's or agent's file reference 47242+47358+A		FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/PEA/416)
International application No. PCT/IT 03/00785	International filing date (day/month/year) 27.11.2003	Priority date (day/month/year) 03.12.2002
International Patent Classification (IPC) or both national classification and IPC B65H19/22		
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- This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
- This REPORT consists of a total of 6 sheets, including this cover sheet.

☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

 These annexes consist of a total of 6 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the opinion
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☒ Lack of unity of invention
- V ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 30.06.2004	Date of completion of this report 22.04.2005
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**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/IT 03/00785

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

Description, Pages

1-16 as originally filed

Claims, Numbers

1-48 received on 19.10.2004 with letter of 18.10.2004

Drawings, Sheets

1/13-13/13 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
☐ the language of publication of the international application (under Rule 48.3(b)).
☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority in written form.
☐ furnished subsequently to this Authority in computer readable form.
☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
☐ the claims, Nos.:
☐ the drawings, sheets:

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5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

IV. Lack of unity of invention

1. In response to the invitation to restrict or pay additional fees, the applicant has:

- ☐ restricted the claims.
☐ paid additional fees.
☐ paid additional fees under protest.
☐ neither restricted nor paid additional fees.

2. ☒ This Authority found that the requirement of unity of invention is not complied with and chose, according to Rule 68.1, not to invite the applicant to restrict or pay additional fees.

3. This Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is

- ☐ complied with.
☒ not complied with for the following reasons:

see separate sheet

4. Consequently, the following parts of the international application were the subject of international preliminary examination in establishing this report:

- ☐ all parts.
☐ the parts relating to claims Nos. .

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1-48
	No: Claims	
Inventive step (IS)	Yes: Claims	1-48
	No: Claims	
Industrial applicability (IA)	Yes: Claims	1-48
	No: Claims	

2. Citations and explanations

**INTERNATIONAL PRELIMINARY
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see separate sheet

1. Reference is made to the following documents:
D1: FR 2 544 701
D4: US 5 772 149
D5: WO 97/32804
2. Document (D1), figure 4 in particular, discloses (the references in parentheses apply to this document) already a rewinder machine for the production of rolls of web material wound around windings cores and comprising:
 - a first winding roller (21);
 - a second winding roller defining with the first winding roller a winding cradle (23);
 - a feeder for sequentially introducing winding cores (Ca) to the winding cradle;
 - a gluer (32) for applying glue on the cores;whereby the feeder includes at least one element for applying the glue to the winding cores during their introduction to the winding cradle (see fig. 4, p. 18, l. 11-26; p. 19, l. 24-31).

The following technical features of claim 1, resp. 31, are novel over D1:

- (a) one elongated member that can be immersed in a container of glue arranged beneath a zone for picking up the winding cores, the elongated member covering itself in glue in the container and transferring the glue by contact to each core sequentially picked by the feeder;
and can be therefore regarded as being special technical features in the sense of Rule 13.1 PCT.

The document D4 is considered to represent the closest prior art for the subject-matter of claim 33 and 44.

The following features of claim 33, resp. claim 44, are considered to be novel over D4:

- (b) an extractor member for extracting a roll formed in the winding cradle mechanically linked to the feeder for sequentially introducing winding cores to the winding cradle.

The following features of claim 45 are novel over the closest prior art document D5:

- (c) a gluer for gluing the free end edge of rolls made by said machine and a common actuator member that controls the movement of feeder and gluer.

The following features of claim 46, resp. claim 48, are novel over the closest prior art document D5:

- (d) a rewinding machine comprising only two winding rollers forming a winding cradle, the winding rollers being kept into rotation during discharge of a completed roll and inserting of a new winding core and method thereof

The above mentioned special technical features (a)-(d) are neither the same nor do they correspond.

The claims do therefore not have a technical relationship as required by Rule 13.1 and 13.2 PCT.

3. As per point 2, the subject-matter of claims 1, 31, 33, 44, 45, 46 and 48 is novel over the available prior art (Article 33(2) PCT).
4. Even if taken in combination the available prior art documents do not suggest the subject-matter of any of the claims 1, 31, 33, 44, 45, 46 and 48 (Article 33(3) PCT).
5. Claims 2-30, resp. 32, 34-43, 47 are dependent on 1, resp. 31, 33, 44, 45 or 46 and as such also meet the requirements of the PCT with respect to novelty and inventive step.
6. Contrary to the requirements of Rule 5.1(a)(ii) PCT, the relevant background art disclosed in the documents D1, D4 and D5 is not mentioned in the description, nor are these documents identified therein.

Claims

1. A rewinder machine for the production of rolls of web material (N) wound around winding cores (A1-A4), comprising:

- a first winding roller (3),
- 5 • a second winding roller (5), defining with said first winding roller (3) a winding cradle,
- a feeder (33) for sequentially introducing winding cores to said winding cradle,
- a gluer (21) for applying glue on said cores,
- 10 characterized in that said feeder (33) includes at least one element (39) for applying said glue to the winding cores during their introduction to said winding cradle.

2. A rewinder machine according to claim 1, characterized in that said element for applying glue to the cores includes at least one elongated member (39) that is immersed in a container (41) of glue arranged beneath a zone for picking up the winding cores, said elongated member covering itself in glue in said container and transferring said glue by contact to each core sequentially picked by said feeder.

3. A rewinder machine according to claim 2, characterized in that said feeder has two elongated members (39).

4. A rewinder machine according to claims 2 or 3, characterized in that said feeder includes two mobile arms (35) between which said at least one elongated member is supported.

5. A rewinder machine according to one or more of the previous claims, 25 characterized in that said feeder (33) oscillates around an axis (37) substantially parallel to the axis of the winding rollers.

6. A rewinder machine according to one or more of claims 2 to 4, characterized in that said elongated member is composed of a wire or a cable stretched between the two mobile arms.

30 7. A rewinder machine according to one or more of the previous claims, characterized in that an extractor member (53-62), for extracting a roll (R1) formed in said winding cradle, is mechanically linked to said feeder (33).

8. A rewinder machine according to claim 7, characterized in that said extractor member (53-62) oscillates around an axis parallel to the axis of at least

one of said winding rollers.

9. A rewinder machine according to claim 8, characterized in that said extractor member is constrained around the axis of rotation (5A) of said second winding roller (5).

10. A rewinder machine according to claims 7 or 8 or 9, characterized in that said extractor member has a pick up surface (61 and 62) for rolls (R) to be unloaded from said winding cradle.

11. A rewinder machine according to claim 10, characterized in that said extractor member includes a pair of oscillating arms (59) articulated around the axis of rotation (5A) of the second winding roller (5), to which said pick up surface is rigidly constrained, and that said oscillating arms (59) are linked to said feeder (33) via tie rods (55) hinged to said arms and to said feeder.

12. A rewinder machine according to claims 10 or 11, characterized in that said pick up surface forms a picking chute (61) for said rolls.

13. A rewinder machine according to claims 10 or 11, characterized in that said pick up surface forms a rolling surface (62) for said rolls.

14. A rewinder machine according to one or more of claims 10 to 13, characterized in that said pick up surface (62) is shaped to insert itself between the roll and the second winding rollers, being substantially tangential to said second winding roller.

15. A rewinder machine according to one or more of the previous claims, characterized in that said feeder (33) is manually controlled.

16. A rewinder machine according to one or more of the previous claims, characterized in that said feeder is controlled by a main motor that also controls the rotation of said first and of said second winding rollers.

17. A rewinder machine according to one or more of claims 1 a 15, characterized in that said feeder is controlled by an independent actuator.

18. A rewinder machine according to one or more of the previous claims, characterized in that it includes a perforator (9) for perforating the web material along transversal perforation lines, and that said perforator is controlled by the same motor that controls said first and said second winding rollers.

19. A rewinder machine according to one or more of the previous claims, characterized in that said first and said second winding rollers are controlled to assume, during at least part of the winding cycle of a roll, mutually different

peripheral speeds to facilitate introduction of the winding core through the nip defined between said first and said second winding rollers.

20. A rewinder machine according to claim 19, characterized in that the change in peripheral speed of said first and second winding roller with respect to each other is manually controlled.

21. A rewinder machine according to claims 19 or 20, characterized in that it includes a brake (101-107) for braking the second winding roller (5), temporarily changing the peripheral speed of the second winding roller with respect to the peripheral speed of the first winding roller.

22. A rewinder machine according to claim 21, characterized in that said brake is manually operated via a control that also operates said feeder.

23. A rewinder machine according to one or more of the previous claims, characterized in that it includes a feed channel (47) for the winding cores, said feeder (33) being equipped with a retaining surface (51) that holds the cores in said feed channel.

24. A rewinder machine according to one or more of the previous claims, characterized in that it includes a third winding roller (8) with a moveable axis.

25. A rewinder machine according to one or more of the previous claims, characterized in that a gluing device (21) is arranged downstream of said first and second winding rollers for gluing the free end edge of the roll.

26. A rewinder machine according to claim 25, characterized in that said gluer is manually controlled.

27. A rewinder machine according to claims 25 or 26, characterized in that said gluing device has a support surface for the roll to be glued, with an opening (31) defining a position of equilibrium for said roll, and with a mobile element (23) for distributing the glue arranged beneath said opening.

28. A rewinder machine according to claim 27, characterized in that said mobile glue distribution element is operated by a manual control (27).

29. A machine according to one or more of claims 25 to 29, characterized in that it includes a pair of tie rods (65 and 66), controlled by the same drive shaft (63) used for controlling the movement of the feeder and the movement of said gluing device (21).

30. A machine according to claim 29, characterized in that said two tie rods are controlled by a pedal (60).

31. A machine according to one or more of the previous claims, characterized in that one of said winding rollers has a pliable cylindrical surface (5B).

32. A rewinder machine for the production of rolls of web material (N) wound around winding cores (A1-A5), comprising:

- a first winding roller (3),
- a second winding roller (5), defining with said first winding roller (3) a winding cradle,
- a feeder (33) for sequentially introducing winding cores to said winding cradle,

characterized in that an extractor member (53-62), for extracting a roll formed in said winding cradle, is mechanically linked to said feeder (33).

33. A rewinder machine according to claim 32, characterized in that said extractor member oscillates around an axis parallel to the axis of at least one of said winding rollers.

34. A rewinder machine according to claim 33, characterized in that said extractor member is constrained around the axis of rotation (5A) of said second winding roller (5).

35. A rewinder machine according to claims 32 or 33 or 34, characterized in that said extractor member has a pick up surface (61 and 62) for rolls (R) to be unloaded from said winding cradle.

36. A rewinder machine according to claim 35, characterized in that said extractor member (53-62) includes a pair of oscillating arms (59) articulated around the axis of rotation (5A) of the second winding roller (5), to which said pick up surface is rigidly connected, and that said oscillating arms (59) are linked to said feeder (33) via tie rods (55) hinged to said arms and to said feeder.

37. A rewinder machine according to claims 35 or 36, characterized in that said pick up surface (61) forms a picking cradle for said rolls.

38. A rewinder machine according to claims 35 or 36, characterized in that said pick up surface (62) forms a rolling surface for said rolls.

39. A rewinder machine according to one or more of claims 35 to 38, characterized in that said pick up surface (62) is shaped to insert itself between the roll and the second winding roller, being substantially tangential to said second winding roller.

40. A machine according to one or more of claims 32 to 39, characterized in that one of said winding rollers has a pliable cylindrical surface (5B).

5 41. A machine according to one or more of claims 32 to 40, characterized by a pair of tie rods (65, 66), controlled by a common drive shaft (63) used for controlling the movement of the feeder and the movement of said gluing device (21).

42. A machine according to claim 41, characterized in that said two tie rods are controlled by a pedal (60).

10 43. A method for producing rolls of web material wound around winding cores: in which

- a first roll (R1) is completed in a winding cradle,
- upon termination of winding said first roll, a new winding core (A2) is inserted via a feeder (33) to said winding cradle and the first roll is unloaded from the

15 winding cradle, with glue being applied to said new winding core, characterized in that said glue is applied on said new winding core via said feeder (33).

44. A method according to claim 43, characterized in that said feeder is immersed at least partially in a container of glue and lifted from it to pick the new

20 winding core, said feeder pushing said winding core into a nip defined between a first and a second winding roller.

45. A method according to claims 43 or 44, characterized by extracting the winding core from the finished roll and recycling it for a subsequent winding cycle.

25 46. A method for producing rolls of web material wound around the winding cores: in which

- a first roll (R1) is completed in a winding cradle,
- upon termination of winding said first roll, a new winding core (A2) is inserted via a feeder (33) to said winding cradle and the first roll is unloaded from the

30 winding cradle via an extractor member (51-61), characterized by controlling said feeder and said extractor member via a common member.

47. A rewinder machine for the production of rolls of web material (N) wound around winding cores (A1-A5), comprising: a first winding roller (3); a

second winding roller (5), defining with said first winding roller (3) a winding cradle; a feeder (33) for sequentially introducing winding cores to said winding cradle; a gluer (21) for gluing the free end edge of the rolls made by said machine, characterized in that a common actuator member (60) controls the movement of

5 said feeder and of said gluer (21).

48. A rewinding machine for the production of rolls of web material (N) wound around winding cores (A1-A5), comprising only two winding rollers (3, 5) forming a winding cradle, on which rolls of web material are sequentially formed, wherein said web material is fed continuously to said cradle, said winding rollers

10 being kept into rotation during discharge of a completed roll and insertion of a new winding core.

49. A rewinding machine according to claim 48, wherein said cores and said web material are fed through a nip (7) formed between said two winding rollers (3, 5).

15 50. A method for subsequently forming rolls of web material wound around winding cores, including the steps of:

- providing a first winding roller and a second winding roller forming a winding cradle;
- continuously feeding said web material to said winding cradle to form a roll in
- 20 said cradle, said roll being formed by contacting it with only said two winding rollers;
- upon completion of said roll, discharging said roll from said cradle, inserting a new core in said cradle and severing said web material, without interrupting feeding of said web material.